Datasheet: LinkRunner™ AT

Key features include:

- *Multiple user-configured AutoTests*
- *Cable length measurement, fault location and fault type*
- *TruePower(tm) Power over Ethernet (PoE) measurement*
- *Ethernet speed and duplex verification at 10/100/Gigabit rates*
- *Twisted pair and fiber optic link testing*
- *Nearest switch identification*
- *DHCP, DNS and Gateway connectivity tests*
- *Ping and TCP port connectivity tests to up to 10 user-selected targets*
- *Results saved on the tester or uploaded to the Link-Live Cloud Service with zero-touch*
- *Results, project and staff management using the Link-Live Cloud Service*
- *Packet reflection at rates up to 1Gbps*

Network technicians and desktop support professionals are under ever-increasing pressure to deploy new infrastructure and ensure user satisfaction.

To address these challenges, LinkRunner™ AT Network Auto-Tester provides quick and complete copper and fiber optic network connectivity testing. This rugged, handheld network tester speeds troubleshooting and reporting with a complete one-button AutoTest and zero-touch Link-Live cloud reporting. The AutoTest performs your required set of connectivity tests in 10 seconds, enabling you to quickly and accurately identify and solve network connectivity problems. Cloud reporting automatically uploads results to the Link-Live Cloud Service for project management and reporting.

Overview

The LinkRunner AT provides the answers you need to quickly troubleshoot connectivity problems:

- Am I following the best troubleshooting practice?
- Is this patch cable good? Where is the cable broken?
- Where does the cable from this jack terminate?
- Is this the correct switch and port? Is it delivering PoE power?
- What is the speed and duplex of my copper and fiber links?
- Are the DHCP and DNS servers working properly?
- Is the Gateway available?
- Are our most important local datacenter servers available?
- Are our key cloud and SaaS applications available?
- Are 802.1X and IPv6 implemented correctly?
- How do I save and manage hundreds of results?
- Were and when is my staff is working and what are they testing?
- How can I do my job better and faster while impressing my boss?

In seconds, the LinkRunner AutoTest provides these answers and more on a brightly colored display that's easy to read under desks or outdoors. You can document your test results to prove the job's done right. With a six hour battery life and rugged design, the LinkRunner AT Network Auto-Tester can work wherever and whenever you need it.

LinkRunner AT Features

Instant-on operation — ready to run your first test in less than three seconds.

Get answers fast — user-defined AutoTest performs your required set of connectivity tests in seconds, enabling you to accurately and quickly identify and solve network problems. The AutoTest facilitates standardized troubleshooting by ensuring that everyone on the support team tests in accordance with the organization-defined, network-specific best practice. Create up to 10 AutoTest profiles for a variety of troubleshooting scenarios.

Take control — use the Link-Live Cloud Service to manage thousands of test results and multiple testers. Easily view and sort results. Organize results by job-specific folders. Tag individual results with detailed comments and images. Create professional reports customized with your logo and project specific information. Know who on your staff is testing what, where and when by assigning a tester to a technician.

Verify connectivity at 10/100/1G over copper or 100/1G over fiber — connect using copper or fiber, turn it on to see link status, connection type, signal strength and traffic.

Nearest switch and VLAN information — uses IEEE Link Layer Discovery Protocol (LLDP) plus the Cisco® and Extreme Discovery Protocols (CDP and EDP) to display the VLAN and nearest switch model, slot and port.

TruePower™ PoE testing — quickly validate PoE performance by drawing actual power up to the 802.3at standard 25.5W. Load the circuit to stress switches, cabling and patch panels, all while measuring the voltage and pairs being used. The ability to validate the TruePower delivery before installing cameras, AP's and phones ensures smooth deployment.

802.1X authentication — verify access to secure networks using 802.1X and MAC Access Control Lists (ACL). The included LinkRunner AT Manager software configures 802.1X EAP type, downloads certificates and enters passwords.

Cable verification and toning — check patch cables using the built-in wiremap port including pin-to-pin connection, or installed wiring for length, shorts, opens or split pairs. The optional office locator kit allows identification of up to six unique ports for documenting cable plants.

IPv4/IPv6 ready — supports both IPv4 and IPv6 networks.

Key device and application availability — in addition to ping, which is often blocked or disabled, the LinkRunner AT performs a TCP port open test to verify application connectivity to up to 10 user-defined servers using IPv4 and IPv6. Router, DNS and DHCP servers are reported.

Document results — Save test results locally on the tester or select the Link-Live Reporting Mode to have results automatically uploaded the Link-Live Cloud Service. Results on the tester are downloaded to your PC and managed locally using the LinkRunner AT Manager PC application. Results uploaded to cloud service are managed using any smart device with a browser and an internet connection.

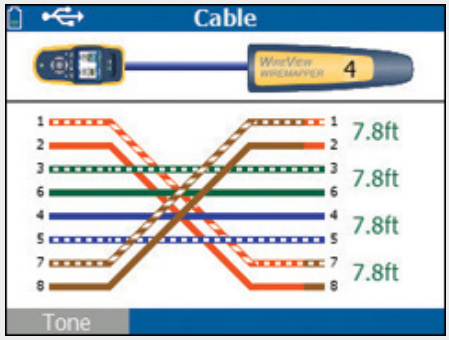
Designed for field use — six-hour Li-ion battery life, one-handed operation and a rugged design.

LinkRunner AT Functions

Cable Length
Measure the length of non-terminated twisted pair cables with TDR.

Graphical Cable Wiremap
Find opens, shorts, mis-wires and split pairs on non-terminated cable with a WireView Cable Identifier or the built-in wiremap port.

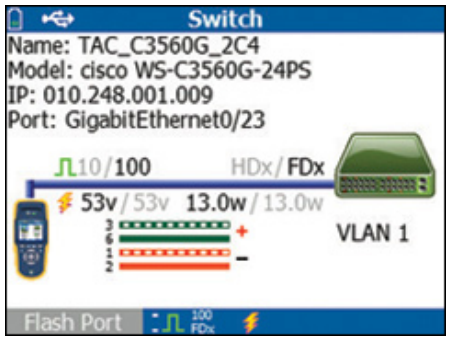
Cable Location
Locate cable runs with toning, switch port discovery, switch port LED blinking and cable identification with up to six remote cable identifiers. Toning supports both analog and digital IntelliTone™ modes.



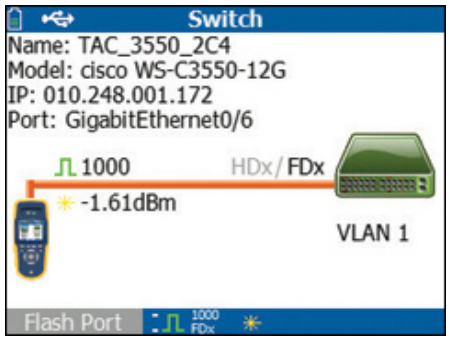
A mis-wired cable with pairs 1,2 and 7,8 swapped using cable identifier #4

Switch Information
LinkRunner AT decodes discovery packets to display critical nearest switch information including:

- Switch name and model
- IP address
- Port, slot and VLAN
- Duplex and speed (actual and advertised)
- Signal strength
- Connection MDI or MDI/X
- PoE voltage and power (actual and test limits)
- Graphical representation of power on pairs

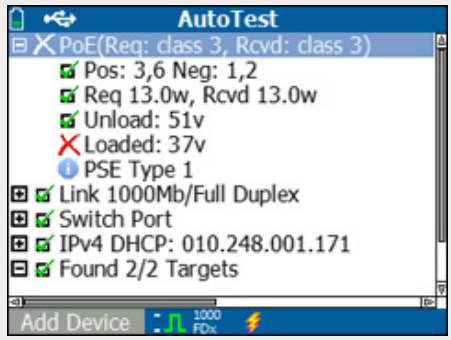


100 Mbps link on copper with PoE on port 23



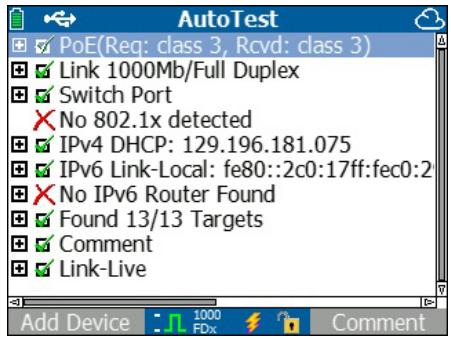
1 Gig link on fiber

TruePower™ PoE Loading
Verify you are receiving the required current and voltage up to 25.5W to power your PoE enabled devices. The LinkRunner TruePower PoE loading draws actual power to verify that your PoE enabled devices will have the required power to function.



AutoTest
Verify enterprise connectivity in seconds with AutoTest. Standardize your set of critical network tests in profiles to run every time. Create, save and share up to 10 network and task specific profiles. Tests include:

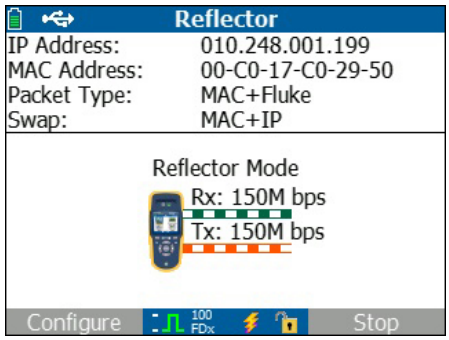
- PoE (copper only) class
- Link speed and duplex(actual and advertised)
- RX pair and polarity
- 802.1x authentication
- Switch name, port, VLAN, model and IP
- DHCP auto-negotiation with subnet and DHCP server addresses
- IPv4 and IPv6 availability
- Ping and TCP port connectivity with lost and min, max and average speed



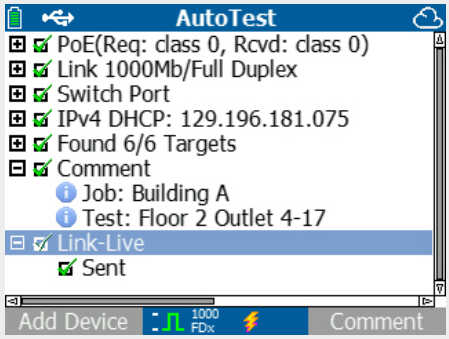
Ping and TCP Port Connectivity
Verify connectivity to key devices with ping and TCP connectivity testing. Devices automatically include a router, DNS server and DHCP server. Configure 10 additional devices to meet your requirements by URL or IPv4/ IPv6 address and optional application port number.

Reflector
The packet reflector mode allows use as a remote device during end-to-end network path performance testing to validate LAN and WAN throughput capabilities at rates up to 1Gbps. The LinkRunner AT 2000 model supports packet reflection for multiple testers including:

- OptiView XG Network Analysis Tablet
- OneTouch™ AT Network Assistant
- EtherScope™ Network Assistant
- MetroScope™ Service Provider Assistant



Link-Live Reporting Mode
Enable Link-Live Reporting Mode to have AutoTest results automatically uploaded to the Link-Live Cloud Service. This zero-touch reporting feature speeds and simplifies reporting and ensures that results are consistently saved. Append comments to each test result. You can even add an image to a test result - a photograph of the link under test for example. Results can be automatically saved to job-specific folders to simplify project management. Up to 10 results are held in memory in the absence of a network connection and uploaded later when a connection is available.

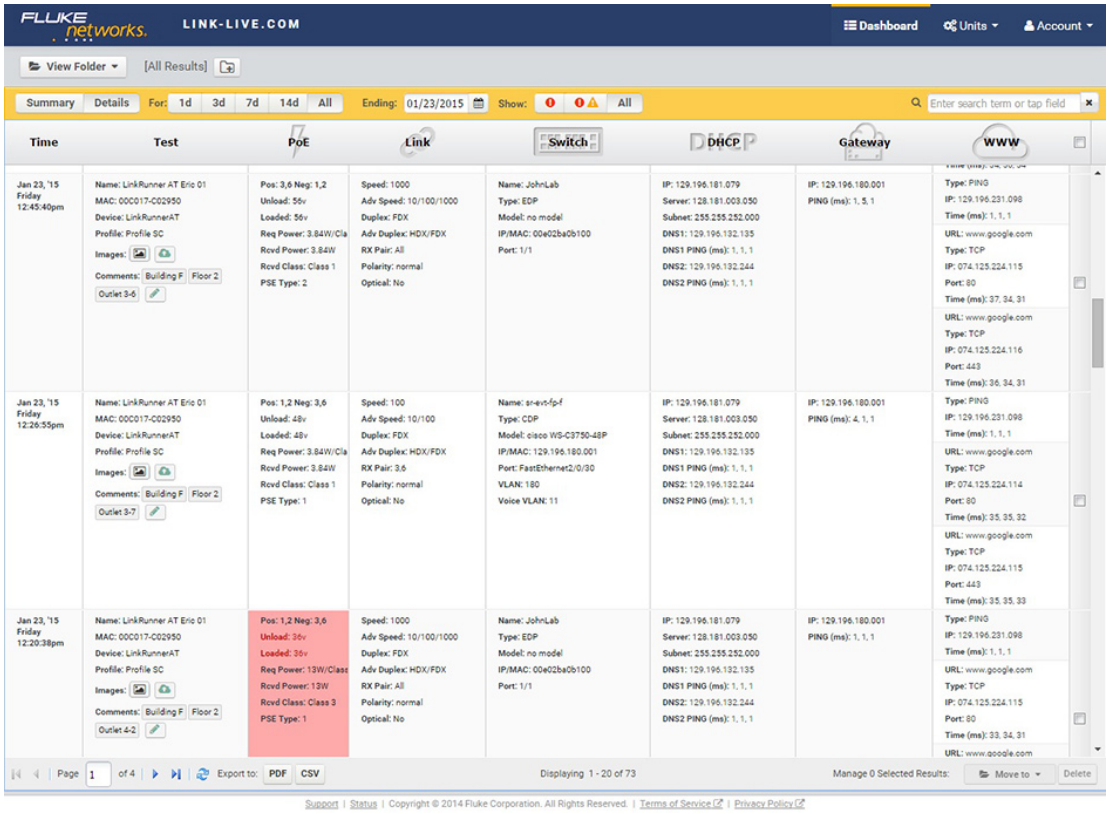


Link-Live Cloud Service

For AutoTest results uploaded via the Link-Live Reporting Mode the Link-Live Cloud Service facilitates management and analysis of test results, test reports, testers, jobs, projects and support staff. The internet-hosted service is available from anywhere at anytime using any smart device with a browser and internet connection.

There are two levels of service: Essentials and Job Pro. Essentials is provided free while Job Pro is an optional fee-based service.

Essentials cloud service features	Job Pro adds the following to Essentials:
View test results uploaded via the Link-Live Reporting Mode	Job folders to simplify job and project management - for example create a folder hierarchy representing job, site, building, floor and work area and organize results accordingly
Sort and filter test results	Automatic uploading of test results into a user-specified folder
Add comments to test results using the cloud service	Add images to test results using the cloud service - for example a photograph of the link under test
Generate reports in PDF and CSV formats	Add images to test results by replying to the email message sent by the service
Claim and manage multiple testers	Graphical analysis PDF report page summarizing the results for all the tests in the report
Configure AutoTest profiles	Custom PDF report cover page - for example add a custom logo, title, subtitle and additional text
Configure AutoTest profiles	
Download AutoTest profiles to remote testers	
Administer multiple organizations	
Email test results to a user-specified address to view results on a smart phone, tablet or PC	
Add comments to test results by replying to the email message sent by the service	



Link-Live Dashboard

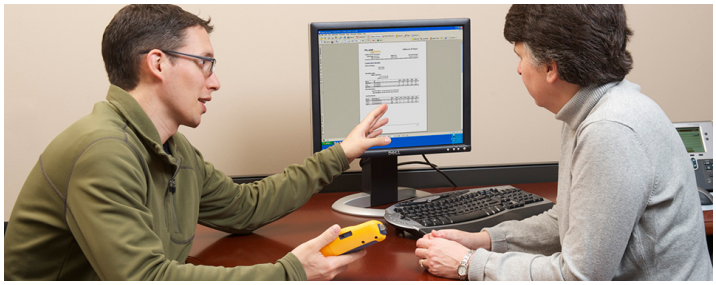
Link-Live Cloud Services

LinkRunner AT Manager Software

For AutoTest results saved locally on the tester via the Local Reporting Mode the LinkRunner AT Manager Software facilitates management and analysis of test results, test reports and testers. LinkRunner AT Manager Software is an application installed on a Windows(R) PC.

LinkRunner AT Manager Software features:

- View test results saved locally on the tester
- Move test results from the tester to a local drive
- Generate reports in PDF, CSV and HTML formats
- Configure AutoTest profile
- Transfer AutoTest profiles between a tester and a local drive
- Capture screen images
- Update tester firmware



Multiple language support

LinkRunner AT fully supports multiple languages including English, French, German, Spanish, Portuguese, Russian, Japanese and Simplified Chinese. Multi-language support includes LinkRunner AT user interface, getting started guide, user manual and supporting LinkRunner AT Manager software, help files and user reports.

Gold Support

Sign up for the Gold Support plan and enjoy unrivaled privileges that support and protect your investment. These include repairs and loaner equipment, unlimited technical assistance seven days a week, 24 hours a day via phone or our website support center; free software upgrades; unlimited web-based training; and access to our extensive Knowledgebase library. Some benefits are not available in all countries. See **www.flukenetworks.com/goldsupport** for more information.

Model Comparison

	Feature	LRAT-1000	LRAT-2000
Basic Test	10/100/100 RJ45 interface	✓	✓
	Solicit PoE voltage (802.3af)	✓	✓
	Link/DHCP/gateway	✓	✓
	Nearest switch (CDP/LLDP)	✓	✓
	Ping/TCP Port single target	✓	✓
UX	Color display	✓	✓
	AA battery pack	✓	option
	Lithium Ion rechargable battery	option	✓
Cable Test	Length and distance to fault	✓	✓
	Flash switch port	✓	✓
	Integrated patch cable test	✓	✓
	WireView office ID/wiremap	option	✓
	Toning (analog and IntelliTone)	✓	✓
Configurable	Configurable PoE class (802.3at)	✓	✓
	Configurable link speed/duplex	✓	✓
	Configurable MAC address	✓	✓
	Configurable VLAN ID	✓	✓
	Configurable 802.1X security	✓	✓
AutoTest	Continuous testing w/ stats	✓	✓
	>1 Ping/TCP target (up to 10)	✓	✓
	AutoTest profiles (up to 10)	✓	✓
Advanced	TruePower PoE load (25.5W)		✓
	100/1000 Fiber SFP interface		✓
	Line rate packet reflector (1Gbps)		✓
	IPv6 support		✓
Reports	Results saved locally on tester	10	50
	LinkRunner AT Manager PC software	✓	✓
	Link-Live Cloud Reporting	✓	✓
	Link-Live Cloud Service	✓	✓

Technical Specifications

Enviromental	
Operating Temperature and Relative Humidity	32ºF to 113ºF (0ºC to +45ºC) *Note: The Li-ion battery will not charge if the internal temperature of the tester is above 113ºF (45ºC)*
Operating Relative Humidity (% RH without condensation)	90% (50ºF to 95ºF; 10ºC to 35ºC) 75% (95ºF to 113ºF; 35ºC to 45ºC)
Storage Temperature	-4ºF to 140ºF (-20ºC to +60ºC)
Shock and Vibration	Random, 2 g, 5 Hz-500 Hz (Class 2) 1 m drop
Safety	EN 61010-1 2nd edition
Safety	EN/IEC 60825-1:2007, EN/IEC 60825-2:2004+ A1:2007 (LRAT- 2000 only)
Altitude	4,000 m; Storage: 12,000 m
EMC	FCC Part 15 Class A, EN 61326-1
Certifications and Compliance	Conforms to relevant European Union directives Conforms to relevant Australian standards Listed by the Canadian Standards Association

General	
Media Access; Copper	RJ-45: 10BASE-T, 100BASE-TX, 1000BASE-T and PoE (IEEE 802.3af and 802.3at)
Media Access; Fiber	SFP Adapter Port supports 100BASE-FX and 1000BASE-LX/SX/ZX (LRAT-2000 Only)
Cable Tests	Pair lengths, opens, shorts, splits, crossed, straight through and cable ID
Tone Generator	IntelliTone digital tone: [500 KHz]; analog tones: [400 Hz, 1 KHz]
Dimensions	3.5 in x 7.8 in x 1.9 in (8.9 cm x 19.8 cm x 4.8 cm)
Weight	18 oz (0.5 kg)
Li-ion Battery	Removable, rechargeable li-ion battery pack (18.5 Watt-hrs). Typical operating life is 6 hours; Typical charge time is 3 hours
AA Battery	Removable AA battery pack. Typical operating life is 3 hours
External AC Adapter/Charger	AC input 90 to 264 Vac 48 to 62 Hz input power DC output 15 Vdc at 1.2 amps
Display	2.8 in color LCD (320 x 240 pixels)
Keypad	12-key elastomeric
LEDs	2 LEDs (Link and Receive/Transmit indicators)
Host Interface	USB 5-pin mini-B

LinkRunner AT Manager Software	
Supported Operating System	Windows® Vista, Windows® XP, Windows® 7, Windows® 8
Processor	400 MHz Pentium processor or equivalent (minimum); 1 GHz Pentium processor or equivalent (recommended)
RAM	96 MB (minimum); 256 MB (recommended)
Hard Disk	Up to 500 MB of available space may be required
Display	1024 x 768 high color, 32-bit (recommended)

Ordering Guide

Item Name	Description
LRAT-2000	Includes LinkRunner AT 2000 with Li-ion battery, Wireview Cable ID #1, LinkRunner Manager software CD, USB cable, RJ45 coupler, Getting Started Guide and soft case.
ACK-LRAT2000	Includes AirCheck™ tester, LinkRunner AT 2000 tester, AirCheck external directional antenna, spare Li-ion battery for either AirCheck or LinkRunner AT, IntelliTone Pro 200 probe, WireView IDs #2-6 cable ids, LinkRunner AT holster, AirCheck holster and deluxe carrying case.
LRAT-2000-FTK	Includes LinkRunner AT 2000, SimpliFiber® Pro optical power meter, 850/1300 multimode source, VisiFault™ VFL, FT120 FiberViewer™, FindFiber™ Remote ID source, carrying case and SC, ST, and LC power meter adapters.
LRAT-2000-KIT	Includes LinkRunner AT 2000, IntelliTone™ Pro 200 Probe, WireView Cable IDs #2-6 and deluxe carrying case.
LRAT2-CIQ-GSV	LinkRunner AT 2000/CableIQ Gigabit Service Kit Includes: LinkRunner AT 2000, CableIQ Qualification Tester, IntelliTone Pro 200 Probe, CableIQ Remote Identifiers #1-7 and deluxe carrying case
LRAT-2000-5PK	Includes 5 LRAT-2000s and 5 WireView #2-6 cable ID sets. *Note: Available only in the US, Canada and Europe.*
LRAT-2000-10PK	Includes 11 LRAT-2000s and 11 WireView #2-6 cable ID sets. *Note: Available only in the US, Canada and Europe.*
CIQ-GSV2	Includes CableIQ™ Qualification Tester, LinkRunner AT 1000, IntelliTone Pro 200 Probe, CableIQ Remote Identifiers #1-7 and deluxe carrying case.
LINKSOLUTIONS-KIT	Includes LinkRunner AT 2000, two LinkSprinter 300 network testers, LinkRunner AT holster and two LinkSprinter holsters. Note: Available only where LinkSprinter 300 is sold.
LRAT-1000	Includes LinkRunner AT 1000 tester with AA battery pack, 4 AA batteries, LinkRunner Manager software CD, USB cable, Getting Started Guide and soft case.
GLD-LRAT	LinkRunner AT Gold Support Services, 1 year
GLD3-LRAT	LinkRunner AT Gold Support Services, 3 years

For a complete listing of LinkRunner AT models and accessories, visit **www.flukenetworks.com/LinkRunnerAT**

Network Auto-Tester

Fluke Networks operates in more than 50 countries worldwide.
To find your local office contact details, go to **www.flukenetworks.com/contact**.

© 2015 Fluke Corporation. Rev: 10/20/2015 11:25 am (Literature Id: 4131738)